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(FILE 'HOME' ENTERED AT 14:27:48 ON 14 MAR 2002)

FILE 'CA' ENTERED AT 14:28:09 ON 14 MAR 2002

L1 1951 S (RF OR RADIO FREQUENCY OR ELECTROMAGN?) (4A) (NOISE OR INTERFER?
OR (RANDOM OR SPURIOUS) (2A) SIGNAL)
L2 156 S L1 (5A) (PREVENT? OR CANCEL? OR COMPENSAT? OR REDUC? OR ELIMINAT? OR
ELLIMINAT?)
L3 120 S L1 AND (SENSOR OR BIOSENSOR OR AMPEROMET? OR POLARIMET? OR COTTRELL
OR POLAROGRAPH? OR CONDUCTOMET?)
L4 491 S L1 (5A) SHIELD? NOT L2
L5 1 S L4 AND LOOP?
L6 268 S L2-3, L5
L7 259 S (L6 NOT PY>2000) OR (L6 AND PATENT/DT)
L8 217 S L7 NOT (AMINOACETIC OR OPTICAL FIBER)

=> d 18 bib, ab 1-217

18 ANSWER 8 OF 217 CA COPYRIGHT 2002 ACS

AN 135:307209 CA

TI Elastic Cu-Be alloy strip for shielding to prevent electromagnetic
interference in microcircuit boards

IN Horng, Chin Fu

PA Taiwan

SO U.S., 7 pp.

PI US 6305067 B1 20011023 US 2000-477287 20000104

AB Elastic shield for preventing electromagnetic interference is manufd, from
Cu-Be alloy strip by: (a) heat treatment of the alloy strip for stiffness;
(b) electroplating the alloy strip; (c) punching and mech. forming the
strip to a suitable contour; and (d) mounting the formed strips on elec.
microcircuit boards for contact with the metal housing. The Cu-Be alloy
strips are typically electroplated with Au and/or Sn-Pb alloy solder, and
are installed with the spacing of 1.5-2.0 cm. The alloy shields have good
elec. cond., mech. flexibility, and resistance to surface oxidn., and are
suitable for installation in computers, replacing conventional conductive
sponge.

18 ANSWER 11 OF 217 CA COPYRIGHT 2002 ACS

AN 135:254083 CA

TI Biosensor electromagnetic noise cancellation

IN Zivitz, Maury

PA Roche Diagnostics Corporation, USA

SO Eur. Pat. Appl., 12 pp.

PI EP 1143245 A2 20011010 EP 2001-108233 20010331

PRAI US 2000-541552 A 20000403

AB A biosensing cell assembly having a measurement loop with a test cell
having an analyte reaction zone for amperometric measurement of a response
current to det. analyte concn. and a noise cancellation loop arranged to be
phys. exposed to the same electromagnetic environment as the measurement
loop. The noise cancellation loop has a predetd. impedance within a range
of the impedance of the test cell analyte reaction zone and provides a
current to cancel or reduce the effects of the electromagnetic environment
on the measurement loop.

18 ANSWER 16 OF 217 CA COPYRIGHT 2002 ACS

AN 134:335719 CA

TI Performance of low output impedance composite pH glass electrodes

AU Veress, Elisabeta; Vegh, Peter

CS Faculty of Chemistry, Department of Inorganic Chemistry, Babes-Bolyai University, Cluj, 3400, Rom.

SO JALA (2000), 5(1), 64-67

AB Low output impedance composite pH sensors were constructed by direct attachment of an impedance converter to lab. purpose combined pH glass electrodes. The signal was transmitted in analog form by unshielded elec. cable. The performance of new and aged composite pH sensors was detd. by the multiple-point calibration method. In case of new electrodes, the slope and the response time, as well as the reproducibility, were insignificantly influenced by the converter attached (the mean slope values calcd. for the six electrode group studied were 57.80 mV/pH for unmodified electrodes and 57.97 mV/pH for modified electrodes). The electrode response was not affected by the presence of various electromagnetic noise sources or by the input impedance value of the measuring instrument. The slope and the response time of aged sensors were considerably improved using the impedance converter. The response time decreased from ~150-180 s to ~30 s and the av. slope value increased from 54.94 mV/pH, calcd. for unmodified electrodes, to 56.96 mV/pH, for modified electrodes.

LB ANSWER 24 OF 217 CA COPYRIGHT 2002 ACS

AN 134:175040 CA

TI Understanding spontaneous output fluctuations of an amperometric glucose sensor: Effect of inhalation anesthesia and use of a nonenzyme containing electrode

AU Ward, W. Kenneth; Wood, Michael D.; Troupe, James E.

CS Legacy Health System, Holladay Park Research Center, Portland, OR, 97232, USA

SO ASAIO Journal (2000), 46(5), 540-546

AB Implantable glucose sensors are often unstable in vivo. Possible causes include local oscillations of glucose or oxygen levels, fluctuation of interferants, and external electromagnetic interference. To better understand glucose vs. non-glucose mediated fluctuations, we compared sensors fabricated with glucose oxidase vs. blank electrodes without enzyme in rabbits. We also investigated the effect of general anesthesia. We used power spectral anal. to investigate transmitted signals from amperometric peroxide sensing devices 2-3 wk after s.c. implantation. Fasted animals were studied for 90 min in the conscious state and for 90 min during halothane anesthesia. Animals exhibited almost no body movement during the studies. In the conscious state, enzyme active sensors demonstrated more oscillations than blank electrodes at almost all frequencies from 2 to > 8 cycles per h. This finding suggested that the spontaneous fluctuations were secondary to local changes in glucose or oxygen. Because fluctuations were not seen in the blank electrode, periodic changes in interferant concns., electromyog. activity, or in external electromagnetic interference are unlikely. General inhalation anesthesia was assocd. with markedly reduced sensor output fluctuation at almost all frequencies in enzyme active sensors. We conclude that fluctuation of electrochem. glucose sensor output, unrelated to fluctuations in blood glucose, is likely secondary to spontaneous changes in the local concn. or vascular delivery of glucose or oxygen. Anesthesia may have stabilized blood flow, preventing normal spontaneous autoregulatory variation.

LB ANSWER 47 OF 217 CA COPYRIGHT 2002 ACS

AN 131:344627 CA

TI High-frequency conductivity measurements by a contactless method in superhigh magnetic fields

AU Kudasov, Yu. B.

CS Russian Federal Nuclear Center, All-Russia Research Institute of
Experimental Physics (VNIIEF), Nizhni Novgorod, 607190, Russia
SO Instrum. Exp. Tech. (1999), 42(4), 527-530
AB High-frequency transmission and reflection induction techniques for cond.
measurements at 103-105 (.OMEGA.cm)-1 in pulse magnetic fields of up to 500
T are described. Elec. circuits include isolating transformers and
bandpass filters for eliminating inphase and antiphase noise components. In
the reflection circuit, the reflected signal is distinguished by using a
rectifier stage and a subtraction circuit. The high-frequency techniques
are an efficient means for eliminating intense electromagnetic noises.

✓ L8 ANSWER 52 OF 217 CA COPYRIGHT 2002 ACS
AN 131:152562 CA
TI Printed circuit boards prepared in prevention of electromagnetic noises
IN Yomo, Kunihide
PA Kyocera Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
PI JP 11214584 A2 19990806 JP 1998-12773 19980126
AB The title circuit boards comprise a thick insulative substrate having (1) a
component-mounting region on its surface, (2) signal electrode and circuit
provided on the surface and inside substrate, (3) power electrode and wire
provided on the surface and inside, and (4) ground electrode and wirings,
wherein ground wirings enclose the signal wires from their top and bottom.
The substrate is made from cryst. MgO-ZnO aluminoborosilicate glass. The
ground wires may be Au, Ag, Cu, or their alloys including 10-70 wt.% powd.
ferrite magnetic materials in desired regions. The ground wiring prevents
noise penetration into the circuit boards.

✓ L8 ANSWER 66 OF 217 CA COPYRIGHT 2002 ACS
AN 129:276727 CA
TI New capacitive-array sensors for post-process cure verification and NDE of
polymers and composites
AU Boltz, E. S.; Tiernan, T. C.; Hartman, W. F.
CS Advanced Technologies Division, TPL, Inc., NE, 87109-4416, USA
SO Rev. Prog. Quant. Nondestr. Eval. (1998), 17A, 1043-1049
AB A review with 5 refs. on new capacitive array sensor process verification
and nondestructive evaluation (NDE) of polymer and composite. The new
sensor incorporates several innovations to maximize sensitivity to material
properties while minimizing the effects of temp., humidity and
electromagnetic interference.

✓ L8 ANSWER 82 OF 217 CA COPYRIGHT 2002 ACS
AN 128:15847 CA
TI Sol-gel based fiber optic and integrated optic chemical sensors for
environmental monitoring and process control
AU Mendoza, Edgar A.; Lieberman, Robert A.; Robinson, Daniel
CS Research Development Division, Physical Optics Corporation, Torrance, CA,
90501, USA
SO Proc. SPIE-Int. Soc. Opt. Eng. (1997), 3136(Sol-Gel Optics IV), 267-274
AB A review with 7 ref. on a sol-gel technol. used to fabricate fiber optic
and integrated optic chem. sensors for environmental monitoring and process
control applications. These multi-sensing-element sensors offer many
advantages, the most prominent being that they are miniaturized,
lightweight, and immune to electromagnetic interference. We are developing
versatile, multianalyte, micro-miniaturized fiber optic chem. sensor (FOCS)
and integrated optic chem. sensor (IOCS) technologies for use in
closed-loop control and process monitoring for industrial and environmental
applications.

16 ANSWER 84 OF 217 CA COPYRIGHT 2002 ACS

AN 128:9281 CA

TI Electronic composite components and modules

IN Matsumoto, Hatsuo

PA Tokin Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

PI JP 09270367 A2 19971014 JP 1996-77135 19960329

AB The title components and modules are an integrated unit comprising inductors, capacitors, resistors, electromagnetic noise filters, common-mode choke coils, current sensors, and/or signal transformers. The components have a 1st conductive circuit pattern buried in a glass/epoxy insulated substrate and a 2nd conductive circuit pattern and a dielec. layer successively laminated on the substrate, wherein the 1st and 2nd conductive circuit layers are connected each other. The dielec. layer may be photochem. epoxy or polybenzocyclobutene. The 1st conductive circuit pattern may contain inductors and capacitors. The 2nd conductive circuit pattern may contain capacitors or resistors. The arrangement makes the composite components compact and thin.

16 ANSWER 96 OF 217 CA COPYRIGHT 2002 ACS

AN 126:331404 CA

TI Material and geometry factors in joint design of electronic equipment to minimize electromagnetic interference

AU Mottahed, Behzad D.; Manoochehri, Souran

CS Bell Laboratories, Lucent Technologies, Whippany, NJ, USA

SO J. Appl. Polym. Sci. (1997), 64(9), 1667-1679

AB Reducing electromagnetic interference in electronic equipment is of great importance. This is normally accomplished by increasing the shielding effectiveness of the enclosure. In this study, shielding effectiveness is examd. against enclosure material, joint geometry, and operating frequency. An exptl. app. is designed and manufd. to aid in finding the suitable joint configurations and materials with high shielding effectiveness. Three groups of material, namely, metallic, filled polymers, and metalized filled polymers, are investigated. In addn. to the choices of material, effect of joint configurations on shielding behavior are examd. Based on the exptl. results, empirical relations are developed that relate shielding effectiveness to effective length, shape factor, and aperture dimensions of the joint structure. Finally, the best material and joint geometry among the investigated cases are presented.

16 ANSWER 99 OF 217 CA COPYRIGHT 2002 ACS

AN 126:219387 CA

TI Flexible printed circuit boards with patterned copper signal circuits

IN Ryoson, Hiroyuki

PA Sony Corp, Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

PI JP 09036501 A2 19970207 JP 1995-187015 19950724

AB The signal wires in the title circuit boards are made of Cu and are patterned in continuously twisted each others to become a continuous bent pattern. The continuously twisted signal wires prevents against external electromagnetic wave noises.

16 ANSWER 105 OF 217 CA COPYRIGHT 2002 ACS

AN 126:68675 CA

TI Sensing circuit boards and sensor circuits in removal of high-frequency noise

IN Endo, Takafumi

PA Mitsubishi Electric Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
PI JP 08264742 A2 19961011 JP 1995-67950 19950327
AB The circuits have noise-generating signal lines which are formed on a ground line over an elec. insulator film. The insulator film may be made from polyimide or acrylic polymers. The arrangement gives the circuit boards an increased load capacitance for elimination of high-frequency noise on the signal lines.

18 ANSWER 113 OF 217 CA COPYRIGHT 2002 ACS

AN 125:102307 CA
TI Electric wires and fabrication thereof for electromagnetic isolation and shielding in microwave and millimeter-wave integrated circuits
IN Ishikawa, Takahide
PA Mitsubishi Electric Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 28 pp.
PI JP 08125412 A2 19960517 JP 1994-253631 19941019
US 5652557 A 19970729 US 1995-544196 19951017
PRAI JP 1994-253631 19941019
AB The fabrication involves forming grooves on dielec. or semi-insulative substrates, providing a side/bottom ground wall in the grooves, filling a dielec. material in the wall-formed grooves, and forming a conductive wire on the dielec. material. The wiring provides effective electromagnetic shielding and eliminates electromagnetic interference between adjacent wirings.

18 ANSWER 118 OF 217 CA COPYRIGHT 2002 ACS

AN 124:218373 CA
TI Semiconductive circuit devices and noise reduction thereof
IN Sato, Mitsuharu; Yoshida, Eikichi; Hotsuta, Yukio
PA Tokin Corp, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
PI JP 08018271 A2 19960119 JP 1994-144965 19940627
PRAI JP 1994-4864 A 19940120
AB Title devices comprise an LSI mounted on a circuit board, an elec. circuit formed in an opposed position to the LSI provided on the other side of the board, and a electromagnetic interference suppression component provided in a clearance between the LSI and the board. The electromagnetic interference suppression component suppresses the noise generated from the circuit boards. The suppression component comprises a support plate and an insulative soft magnetic material.

18 ANSWER 163 OF 217 CA COPYRIGHT 2002 ACS

AN 115:230639 CA
TI Potentiometric determination in nonaqueous media of the acidity of butter fat
AU Collomb, M.; Spahni, Monika
CS Stn. Fed. Rech. Lait., Liebefeld, CH-3097, Switz.
SO Mitt. Geb. Lebensmittelunters. Hyg. (1991), 82(2), 174-86
AB A potentiometric method for detg. the acidity of butter fat in nonaq. media is described, employing a differential amplifier connected to a pair of sym. and shielded electrodes and an auxiliary electrode to largely eliminate electromagnetic and static interferences commonly obsd. in potentiometric titrns. in poorly conducting solns. Following optimization, comparison with official Swiss or international visual titrn. methods revealed a superior reproducibility of the potentiometric method (relative std. deviation of 0.78%).

168 ANSWER 167 OF 217 CA COPYRIGHT 2002 ACS
AN 111:246930 CA
TI A differential method of signal measurement and estimation of ionization interferences in laser atomic-ionization flame spectroscopy
AU Matveev, O. I.
CS Sci.-Ind. Firm "Khimvolokno", Mytishchi, USSR
SO Zh. Anal. Khim. (1989), 44(2), 374-6
AB A differential method using 3 electrodes was developed for signal recording in at. ionization spectroscopy. The method reduced the interference level from the electromagnetic field of the pulse voltage generator of N pumping laser by 5-10 times depending on the distance between the recording electrodes and symmetry of their location in the flame with respect to the high voltage electrode. It was applied for anal. of Mg in the presence of excess Na, and it increased the lower linearity range of the Mg calibration curve by >2 orders, from >102 ng/L (for the conventional 2 electrode method) to <1 ng/L.

169 ANSWER 170 OF 217 CA COPYRIGHT 2002 ACS
AN 111:69192 CA
TI A substrate temperature measurement system for use during rf diode sputtering
AU Snyder, J. E.; Kryder, M. H.
CS Carnegie Mellon Univ., Pittsburgh, PA, 15213, USA
SO Rev. Sci. Instrum. (1989), 60(4), 749-51
AB A substrate temp. measurement system is described, which has proved useful for measuring substrate temp. in situ in a radio-frequency diode sputtering system. This temp. measurement system mimics the true deposition materials, geometry, and thermal contact as much as possible. The measurement electronics are quite insensitive to radio-frequency interference and allow for cancellation of lead resistance and thermoelec. voltages.

170 ANSWER 179 OF 217 CA COPYRIGHT 2002 ACS
AN 107:29551 CA
TI Noninterceptive wideband pickups for measuring the properties of very low intensity beams
AU Ellison, Timothy J. P.; Fox, C. Michael; Koch, Steven W.
CS Indiana Univ. Cyclotron Facil., Bloomington, IN, 47405, USA
SO Nucl. Instrum. Methods Phys. Res., Sect. B (1987), B24-25(Pt. 2), 873-6
AB Nondestructive wideband radio-frequency (rf) beam diagnostics, designed for use in the cooler storage ring, are being used in the cyclotron beam lines. Wall gap monitors monitor the beam microscopic time structure, macroscopic time structure, and phase with respect to the main synthesizer; electrostatic pickup electrodes monitor the beam position and intensity. The signal processing and rf-interference-elimination techniques which allow these monitors to operate with beam intensities as low as 10 nA are described. The performance limitations for rf pickups in low energy, low intensity accelerators, and possible methods for using the powerful synchronous detection techniques with nonbunched beams are discussed.

171 ANSWER 181 OF 217 CA COPYRIGHT 2002 ACS
AN 105:181237 CA
TI Wideband interferometric acoustooptic spectrum analyzer
AU Lu, R.; Chang, I. C.; Tarng, S. S.
CS Litton Appl. Technol., Sunnyvale, CA, 94086, USA
SO Proc. SPIE-Int. Soc. Opt. Eng. (1986), 639(Opt. Inf. Process. 2), 131-9
AB Wideband interferometric acoustooptic spectrum analyzers are discussed. A novel electronic cancellation technique was demonstrated that effectively.

reduced the spurious signal caused by the broadband radio-frequency refs. Detailed description of the interferometric spectrum analyzer hardware is presented. The system demonstrated a dynamic range of 55 decibels above tangential sensitivity.

18 ANSWER 190 OF 217 CA COPYRIGHT 2002 ACS

AN 103:98066 CA

TI Device for selective measuring of ions in a liquid

PA Cordis Europa N. V., Neth.

SO Neth. Appl., 12 pp.

PI NL 8302963 A 19850318 NL 1983-2963 19830824

US 4589970 A 19860520 US 1984-641911 19840816

PRAI NL 1983-2963 19830824

AB The system consists of a measuring circuit with a ref. electrode, an amplifier and an ion-sensitive field effect transistor (ISFET), which serves as a selective ion sensor. The measuring circuit is connected to a protecting circuit contg. at least an electrode that, by means of a safety element with low impedance for high voltages and a high resistance for low voltages, is connected to the measuring circuit via a low impedance contact. The protecting circuit contains an electrode, constructed from a conducting material (stainless steel or Ti) with a large surface, that has a low impedance upon immersion in the test soln. The electrode can be linked, via a condenser, a diode and/or a MOSFET which in a conductive state are outside the working area of the ISFET, to a contact which is in low-impedance connection to the bulk of the ISFET. The circuit also contains a 2nd electrode (e.g. Al) as a metal ring around the gate area of the ISFET and that via a diode and/or MOSFET is connected to the measuring circuit. The 1st electrode is linked to the condenser and the 2nd to the diode and/or MOSFET. A diode and/or MOSFET as protecting element can be fitted on the ISFET-chip. The condenser has a capacity of ≥ 100 nF. The protecting circuit is sufficient to protect against external influences such as electromagnetic interferences in biomedical and industrial applications.

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